



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,813	06/29/2001	Daniel Wang	019988000610	6996
20350	7590	11/08/2004	EXAMINER: LEUNG, CHRISTINA Y	
TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			ART UNIT 2633	PAPER NUMBER

DATE MAILED: 11/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/896,813

Applicant(s)

WANG ET AL.

Examiner

Christina Y. Leung

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because the elements shown only as blank boxes, particularly elements 10-14 and 10A-14A in Figures 1A and 1B, should have descriptive as well as numeric labels. Although Examiner understands that Figures 1A and 1B generally depict nodes in a network, descriptive labels are especially necessary to distinguish element 10 (a “switch node”) from element 10A (an “IP router”), for example. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 6 and 7 are objected to because of the following informalities:

Claim 6 recites “preformed” in line 2 of the claim. Examiner respectfully suggests that Applicants change this word to “performed.”

Claim 7 recites “wherein said node noticing said failure transmitting a message to all other of said interconnected nodes of said optical network to abort said results.” However, Examiner respectfully suggests that Applicants amend the claim to read “wherein *said rejecting results substep further includes* said node noticing said failure transmitting a message...” (echoing the language used in claim 6 on which claim 7 depends), since according to Applicants’ specification, the step or substep of transmitting a message to all interconnected nodes to abort results occurs in relation to a rejecting results substep and does not necessarily occur in all circumstances.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Barnsley (US 5,488,501 A).

Regarding claim 8, Barnsley discloses a fiberoptic network having a plurality of interconnected nodes (Figure 6 shows a network having nodes 51) with each node capable of selectively switching optical signals in a first wavelength channel in an input fiber to any one of a plurality of wavelength channels and output fibers (Figure 1 shows a node in detail; column 4, lines 8-17 and lines 58-67; column 5, lines 1-3), the fiberoptic network comprising

a control network having a reserved wavelength channel between the interconnected nodes for carrying signaling (Barnsley discloses that control signals are routed through connections in the network on different wavelength channels than the ones used for data; column 8, lines 15-30); and

control signals for network restoration and provisioning operations (Barnsley further discloses that the control signals may be used to configure/restore connections in the network; column 5, lines 54-67; column 6, lines 1-14).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2633

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogura et al. (US 5,548,639 A) in view of Xiong et al. (US 6,671,256 B1).

Regarding claim 1, Ogura et al. disclose in a network having a plurality of interconnected nodes (Figures 1, 3, and 6), each node capable of selectively switching signals in a first channel and an input path and to any one of a plurality of channels and output paths (Figure 3; column 5, lines 29-47), a method of restoring connection between the nodes upon a failure of the network, the method comprising:

maintaining at each of the nodes a synchronized database (VPI table 33) of network connections between the nodes (column 2, lines 27-60; column 5, lines 16-17 and lines 37-46);

sending messages to other nodes to initiate restoration operations by a node noticing the failure (column 5, lines 57-64; column 6, lines 19-42); and

recalculating network connections around the failure by each node from a synchronized database at the node (column 6, lines 43-67; column 7, lines 1-67; column 8, lines 1-44; essentially, Ogura et al. disclose each node, such as nodes N2, N4, and N8, recalculates network connections around a failure by updating its database/VPI table).

Ogura et al. do not specifically disclose that the network is an optical network or that the channels are wavelength channels transmitted over optical fiber. However, it is well known in the art that nodes such as disclosed by Ogura et al. may communicate optical signals in wavelength channels over optical fiber in order to efficiently communicate large amounts of

data. Xiong et al. in particular teach transmitting optical signals between nodes in a network and switching the signals in the optical domain (column 1, lines 12-37).

It would have been obvious to a person of ordinary skill in the art to use the system already disclosed by Ogura et al. in an optical network with optical signal channels as suggested by Xiong et al. in order to increase the speed and bandwidth of communications (compared to in an all-electrical network).

Regarding claim 2, Ogura et al. disclose that wherein the recalculating network connections step is performed independently by each node (column 7, lines 32-67; column 8, lines 1-48). Ogura et al. disclose that each node modifies its own database/VPI table separately to create a recalculated network connection.

Regarding claim 3, Ogura et al. disclose that the synchronized database maintaining step comprises

accepting results of the recalculating network connections at all of the interconnected nodes of the optical network (Ogura et al. disclose accepting the results by establishing/using the resulting alternative connections at each node, for example; column 6, lines 42-46).

Examiner notes that the current claim recites that the database maintaining step comprises accepting results *or* rejecting the results and therefore, the claim does not positively recite a method that necessarily includes both steps. Based on Applicants' specification, Examiner suggests that Applicants may amend the claim to recite that the maintaining step comprises accepting results (under one set of conditions) *and* resulting results (under another set of conditions) in order to direct the claim to a method including both accepting and rejecting steps

(instead of a method that may include either an accepting step as recited or a rejecting step recited but not necessarily both).

Regarding claim 4, Ogura et al. disclose that the accepting results substep is performed upon acknowledgment by each node of successful completion of the recalculation network connections step (column 6, lines 33-49).

Regarding claim 5, Ogura et al. in view of Xiong et al. describe a method of restoring connection between the nodes as discussed above with regard to claims 1-4. Xiong et al. further disclose that successful completion of the recalculation network connections step is acknowledged by transmitting an acknowledgment message to the node noticing the failure (column 6, lines 33-49; in the example situations discussed by Ogura et al., the “node noticing the failure” is called node N8). Ogura et al. further disclose that the node noticing the failure (N8) transmits a message (called a “path setup message”) to all other of the interconnected nodes to update databases (i.e., the VPI tables) of the interconnected nodes (such as nodes N2 and N4) with the results of the recalculation (column 7, lines 32-67; column 8, lines 1-44).

Regarding claim 6, claim 6 is solely directed to additional details regarding the rejecting results substep. However, again, claim 3 on which it depends recites that the synchronized database maintaining step comprises accepting results *or* rejecting results. Since Ogura et al. disclose the recited accepting results substep as discussed above, claim 6 is also rejected as being unpatentable over Ogura et al. in view of Xiong et al. because claim 6 is not necessarily further limiting. In other words, since claim 3 does not necessarily include a rejecting results substep, the limitations of claim 6 directed to that substep do not necessarily further limit the claim when the database maintaining step comprises the accepting results substep.

Art Unit: 2633

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogura et al. in view of Xiong et al. as applied to claims 1-3 and 6 above, and further in view of Grover (US 4,956,835 A).

Regarding claim 7, as well as the claim may be understood with regard to the claim objection discussed above, Ogura et al. in view of Xiong et al. describe a method of restoring connection between the nodes as discussed above with regard to claims 1-3 and 6. Xiong et al. do not specifically disclose that the node noticing the failure may transmit a message to all other interconnected nodes to abort results. However, Grover teaches a method related to the one described by Ogura et al. in view of Xiong et al. including restoring connections between nodes in an optical network by sending recalculation messages to nodes (Abstract; column 9, lines 46-55). Grover further teaches that a node noticing a failure (called the "SENDER" node in the arrangement taught by Grover) may transmit a message to all other interconnected nodes to abort/cancel results of recalculation steps (column 12, lines 22-30).

It would have been obvious to a person of ordinary skill in the art to further include allowing the node noticing the failure to send messages to the interconnected aborting the recalculation results as taught by Grover in the method described by Ogura et al. in view of Xiong et al. in order to allow the network to revert back to its previous state. Grover particularly teaches that the recalculated connections between nodes may be removed by sending abort messages after the failed connections have been repaired (column 12, lines 22-25). One in the art would have been particularly motivated to generally include aborting the recalculation results as taught by Grover in the method described by Ogura et al. in view of Xiong et al. since that

Art Unit: 2633

method is already directed to coping with network connection failures, and it would be well understood in the art that the failed connections would be eventually repaired and reactivated.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barnsley in view of Xiong et al.

Regarding claim 9, Barnsley discloses a network as discussed above with regard to claim 8 including telecommunications signals, but Barnsley does not specifically disclose Internet protocol signals.

However, Internet protocol signals are well known in the art. Xiong et al. particularly teach a system related to the one disclosed by Barnsley including an optical communications network with a plurality of nodes transmitting wavelength multiplexed channels including data channels and control channels (Figure 2; column 3, lines 37-55; column 4, lines 23-33). Xiong et al. further specifically teach that the signals in their system may be Internet protocol signals (column 1, lines 12-20; column 3, lines 29-31).

It would have been obvious to a person of ordinary skill in the art to specifically use Internet protocol signals as suggested by Xiong et al. as the various signals in the network disclosed by Barnsley et al. in order to use the system to process and restore signals transmitted in the context of an Internet network and thereby improve already known/established Internet communications systems.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

Art Unit: 2633

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christina Y Leung
Christina Y Leung
Patent Examiner
AU 2633